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STATISTICAL BULLETIN

METROPOLITAN LIFE INSURANCE COMPANY

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Prevent Summer Drownings From Small Boats

TOO MANY people who know little about the safe handling of small watercraft undertake to operate them. Too many others do not even know how to act safely on board, merely as passengers. In consequence, some 700 persons are drowned annually in the United States in accidents involving rowboats, canoes, small motorboats, and sailboats. This is exclusive of accidents of this type suffered in the pursuit of gainful occupation.

An annual toll of 700 deaths is a large item, but unfortunately it has not received adequate consideration in our summer safety campaigns. Great credit is due to the American Red Cross and the Minnesota Public Safety Committee for their splendid work in promoting safety in the use of small craft. But, by and large, this field of safety effort has been neglected, probably because the extent of the loss of life in small-boat drownings is not generally appreciated. Fatalities of this kind lack the spectacular appeal of catastrophes. Major disasters on our inland and coastal waters, the worst of which in recent times were the burning of the *Morro Castle* (134 deaths), the sinking of the steamer *Vestris* (110 deaths), and the blowing to bits of the steamboat *Observation* (72 deaths), arouse the public conscience and are made the subject of numerous governmental investigations. Yet we hear little about the number of lives lost in small-boat accidents, though this number, in a single year, is just about equal to the number of deaths in all our major ship disasters over the period of 15 years ending in 1938.

The circumstances surrounding deaths by drowning in small-boat accidents, as revealed by an analysis of the mortality records of 100 persons who had been insured in the Industrial Department of the Metropolitan Life Insurance Company, are suggestive of the major causes of accidents of this kind. Rowboats, numerically the preponderant small watercraft, were involved in about half the drownings. Small-motorboat mishaps accounted for 18 deaths; canoes accounted for 18; kayaks, four; collapsible canvas boats, four; and sailboats, three.

The majority of the deaths—

about two thirds of them—occurred among persons who were merely cruising or rowing about for pleasure. The remaining third, comprising 34 deaths, occurred while fishing (27 deaths), duck hunting (three deaths), crabbing (three deaths), or frog hunting (one death). Heavy clothing and high boots worn by fishermen and hunters handicapped many of them in their efforts to swim to safety.

Nineteen, or about one fifth of the 100 victims, were drowned when their boats were swamped or upset by sudden storms, squalls, or high winds, which made management of the boats unexpectedly difficult. An equal number were drowned when they lost their balance and fell from boats while standing up, pulling in a fishing catch, leaning out to look at motors, or making minor repairs.

Many lives were lost when boats were swamped or upset through a variety of other causes, including leaky hull (six deaths), occupants standing up to change places (five deaths), boat striking object in water (four deaths), boat going over a dam when operator lost control (five deaths), children playing on or playfully rocking boats (four deaths), upset in the wash of other boats (three deaths), overcrowding (two deaths). Careless launching, careless anchoring, and collisions between motor boats, each accounted for the loss of one life. Six victims were thrown from boats by sharp swerves, and two were drowned while attempting to free boats caught in mire and pilings.

Inability to swim was a contributing factor in a large percentage of the deaths. While the facts regarding swimming ability are recorded for only one third of the deaths among the policyholders, the available data indicate that about one half of the victims could not swim. In the study of the Minnesota Public Safety Committee, it was found that fully 80 percent were unable to swim.

Cruising about in small watercraft is fine, healthful recreation. With reasonable care it need not involve great danger. A few simple rules, if followed generally, would prevent most of the fatalities. Obviously one should know how to handle the boat safely. This can be learned in a comparatively short time. Leaky and otherwise defective boats should not be used. The operator should learn about the hazards peculiar to the waters on which the craft are to be used. Those who cannot swim would do well to stay out of small boats altogether. Better still, they should learn to swim without delay.

A New Peak for Smallpox

New Jersey, with a population of about 4,400,000, has not had a single case of smallpox in a period of more than seven years—since 1931. On the other hand, the States of North and South Dakota,

Montana, Idaho, Oregon, Wyoming, and Utah, whose combined population is less than that of New Jersey, reported during the same period 12,666 cases of this loathsome disease. Why?

Chiefly because in New Jersey the people readily accept the principle of vaccination as a preventive of smallpox, while in the other seven States compulsory vaccination is generally opposed by the population, and little help is given the health authorities in their efforts to stamp out the disease. Strange as it may seem, three of these Western States actually prohibit compulsory vaccination by statutory regulation, regardless of prevailing circumstances.

It was mainly due to such conditions in our Western States that the country, as a whole, was forced to record once again an increase of its disgracefully high incidence of smallpox. Last year the total number of cases mounted to 15,111 as against 11,687 in 1937 and 7,823 in 1936. Although comparable figures are not yet available for most foreign countries, it is safe to say that, when they do become known, the United States will again have the unenviable distinction of leading the great Western civilized countries in its tolerance of this disgusting, disfiguring, and dangerous disease.

Canada also showed a substantial increase of smallpox during 1938, the total cases reaching 127, as compared with 61 in 1937 and 62 in 1936. But even so, the case rate for Canada was only 1.1 per 100,000, as compared with 11.6 for the United States.

As usual, the States chiefly responsible for the high smallpox prevalence last year were those lying north of the Ohio and west of the Mississippi Rivers. These States, whose total population is only slightly more than half of the entire population of the United States, reported 14,166 cases of smallpox in 1938 as against only 945 cases for the rest of the country. As against this record, New England and the populous States of New York, Pennsylvania, New Jersey, Delaware, and Maryland, including the District of Columbia (total population 39,000,000) succeeded in utterly routing the disease from their borders; not a single case of smallpox was reported by these States during the entire year.

A factor responsible for the complacent attitude of the Western States in respect to smallpox is the mild character of the disease which now prevails. Apparently, since few die of this form of smallpox, the people of these States feel that there is no particular cause for fear. Nevertheless, although authorities differ regarding the possibility of malignant smallpox developing spontaneously from this milder type of the disease, the potentialities of the present situation are exceedingly serious. Avoidance of vaccination by so large a part of the population creates a fertile field for the spread from sporadic cases of malignant smallpox introduced from outside sources. The ease and rapidity of

modern transportation make this an ever-present liability charged with most unfortunate consequences.

Take, for example, the experience of Minnesota, a State which has specifically prohibited compulsory vaccination since 1903. During the first 20 years following the passage of this law the average number of cases reported approximated 3,000 annually. But nobody worried, since the prevailing type of smallpox was mild and very few deaths were recorded. In 1924, however, when malignant smallpox was introduced from Canada, it found a large unvaccinated population openly susceptible to its ravages. Within 20 months 4,041 cases of this form of the disease were recorded, with 504 deaths. Significantly, only 72 of these 4,041 cases occurred among persons who had been successfully vaccinated within the previous seven years and only one of this group succumbed to the disease. Of the other 3,969 cases about 85 percent (3,442) had never been successfully vaccinated. The panic caused by this epidemic brought about the vaccina-

Smallpox Cases, Deaths, and Case-Fatality Rates for 48 States, District of Columbia, and Nine Canadian Provinces, Years 1936–1938

Area	1938			1937			1936		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
United States and Canada..	15,238	48	0.32	11,748	34	0.29	7,885	34	0.43
United States (48 States and District of Columbia)....	15,111	45	0.30	11,687	32	0.27	7,823	32	0.41
Canada (Nine Provinces)...	127	3	2.36	61	2	3.28	62	2	3.23

Smallpox Cases, Deaths, and Case-Fatality Rates for 908 United States Cities and 83 Canadian Cities, Years 1936–1938

Area	1938			1937			1936		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
United States and Canadian Cities (991).....	3,252	8	0.25	3,233	5	0.15	2,143	8	0.37
United States Cities (908)..	3,242	8	0.25	3,227	5	0.15	2,105	6	0.29
Canadian Cities (83).....	10	0	0	6	0	0	38	2	5.26

tion of thousands who had never previously been immunized, and accordingly the annual number of cases immediately dropped from 3,000 to about 225 a year during the following decade. However, as pointed out by the State health authorities, there have been more than 625,000 children born in Minnesota since 1925, very many of whom have never been vaccinated, and it is only a question of time before new high levels of smallpox incidence may be expected in this State. As a matter of fact, this natural consequence has already developed; in 1936 there were 397 cases of smallpox reported in Minnesota; in 1937 the cases increased to 671, and in 1938 to 859.

Smallpox Cases per 100,000 Population Reported by Each State During the Three-Year Period 1936–1938

State	Cases per 100,000 Population	State	Cases per 100,000 Population	State	Cases per 100,000 Population
Maine	0	South Carolina	0.7	California	11.4
New Hampshire	0	Georgia	0 7	Arizona	15.1
Massachusetts	0	Louisiana	1.0	Utah	20.0
Rhode Island	0	Alabama	1.6	Indiana	21.7
Connecticut	0	Tennessee	2.4	Colorado	22.4
New Jersey	0	Mississippi	2.5	Minnesota	24.2
Pennsylvania	0	Nevada	2.6	Missouri	27.6
Delaware	0	Ohio	2.7	Nebraska	27.6
Maryland	0	Michigan	3.2	Kansas	34.0
District of Columbia	0	Texas	4.7	Washington	36.1
Vermont	0.2	Arkansas	5.8	Iowa	42.5
Virginia	0.2	New Mexico	6.2	Oregon	54.2
Florida	0.5	Kentucky	6.7	Wyoming	59.6
New York	0.5	Wisconsin	9.6	South Dakota	62.3
West Virginia	0.6	Illinois	9.9	North Dakota	69.1
North Carolina	0.6	Oklahoma	10.1	Idaho	70.3
				Montana	123.6

Cities in the United States Reporting High Prevalence of Smallpox in 1938

Cities	Cases	Cases per 100,000 Population	Cities	Cases	Cases per 100,000 Population
Yakima, Wash.	194	847	Coffeyville, Kans.	54	332
Independence, Mo.	77	459	Boone, Iowa	39	328
Boise, Idaho	107	451	Aberdeen, Wash.	64	284
Logansport, Ind.	78	421	Mishawaka, Ind.	65	212
Marshalltown, Iowa	77	421	Anderson, Ind.	90	211
Moberly, Mo.	61	404	Ponca City, Okla.	29	164
Minot, N. D.	68	380	Granite City, Ill.	42	162
Middlesboro, Ky.	38	358	Mansfield, Ohio	40	120
Harrisburg, Ill.	40	334	Evansville, Ind.	128	117

It is strange that modern communities, enlightened in other respects, should still tolerate smallpox, for of all the scourges of mankind, none is so easily controlled. Vaccination rarely causes more than minor discomfort, and the cost of its administration is so small as to place it within the means of all. It is safe to say that smallpox can be just as thoroughly eliminated from the Western part of the country as it has been from the States bordering the Atlantic. All that is needed is an aroused determination on the part of the public to scrap its present ineffectual methods of control, and to substitute the easy, inexpensive, and thoroughly effective measure of universal vaccination. Neglect of these precautions is little short of criminal.

The Marriage Rate in Relation to the Annual Rate of First Births

DESPITE the modern trend to small families, first births still tend to occur soon after marriage. Indirect evidence of this is seen in a parallel movement of the statistics of marriages and of first births. A study of the rates in New York State in the period 1919 to 1937 shows that, almost without exception, an increase in the marriage rate from one year to the next is followed—with a lag of one year—by a corresponding increase in the birth rate of first children to mothers. The pertinent figures are exhibited in the second and third columns of the table on page 7.

It will be observed that during the period under survey, 1919 to 1937, the marriage rate in New York moved from a high point of 10.8 per thousand total population in 1920, to a low point of 7.9 in 1932; thereafter the marriage rate rose to a maximum of 11.0 per thousand in 1936. During this same period the births of first children to mothers, per thousand of total population, declined from a maximum of 7.2, in 1921, to a minimum of 5.3 in 1933 and also in 1934; the years following witnessed only slight increases. A more detailed understanding of the correspondence in the movements of the two series of rates can be obtained by an examination of the year-to-year changes in marriage rates and first-birth rates, as set forth in the accompanying table.

In the fourth column of the table, opposite each year, is shown the increase or decrease in the marriage rate from that of the *previous* year. For example, the figure —1.1 opposite the year 1921 is the decrease in the marriage rate for that year, 9.7 per 1,000, from that for 1920, namely 10.8 per 1,000. The last column of the table contains the year-to-year changes in the first-birth rates. In this case, the entry is made so that the change is shown opposite the year from which the difference is taken. Thus, the figure —0.6 opposite the year 1921 in the last column of the table is the

difference between the first-birth rates for 1921 and 1922, which are 7.2 and 6.6 per 1,000 respectively.

As the table now reads, it shows that the decrease of 1.1 per 1,000 in the marriage rate from 1920 to 1921 was followed by a decrease of 0.6 per 1,000 in the first-birth rate from 1921 to 1922. In the same way it is seen that the increase of 0.7 per 1,000 in the marriage rate from 1919 to 1920 was followed by an increase of 0.2 in the first-birth rate from 1920 to 1921. By inspection of the remaining figures in the last two columns of the table it will be observed that, in a three-year period in which there is an increase in the marriage rate from the first to the second year, this increase is generally followed by an increase of the first-birth rate from the second to the third year. Similarly, a decrease in the marriage rate within the first two years of a three-year period is followed by a decrease in the first-birth rate in the last two years of the period. There are, it is true, some exceptions to this rule. Thus, in the three-year period 1924 to 1926, the increase in the marriage rate from 1924 to 1925 was followed by a decrease in the first-birth rate from 1925 to 1926, and the changes in the marriage rates from 1932 to 1933 and from 1934 to 1935 were not accompanied by any noticeable changes in the first-birth rates.

As a measure of the degree of

Annual Marriages and Annual First Births per 1,000 Total Population in New York State, 1919 to 1937

Year	Marriage Rate per 1,000 Population	First-Birth Rate per 1,000 Population	Increase (+) or Decrease (—) in Marriage Rate from Previous Year	Increase (+) or Decrease (—) in First-Birth Rate to Following Year
1937	10.5	5.9	—0.5	.....
1936	11.0	5.6	+1.0	+0.3
1935	10.0	5.6	+ .4	*
1934	9.6	5.3	+1.2	+ .3
1933	8.4	5.3	+ .5	*
1932	7.9	5.7	— .5	— .4
1931	8.4	5.9	— .3	— .2
1930	8.7	6.2	— .5	— .3
1929	9.2	6.1	+ .4	+ .1
1928	8.8	6.3	— .6	— .2
1927	9.4	6.4	— .3	— .1
1926	9.7	6.1	+ .2	+ .3
1925	9.5	6.4	+ .1	— .3
1924	9.4	6.5	— .6	— .1
1923	10.0	6.3	+ .7	+ .2
1922	9.3	6.6	— .4	— .3
1921	9.7	7.2	—1.1	— .6
1920	10.8	7.0	+ .7	+ .2
1919	10.1	5.8	.....	+1.2

*No change.

correspondence between the annual changes in the marriage rates and the annual changes in the first-birth rates, the coefficient of correlation, allowing a lag of one year, has been computed. It is found to be very high, namely $+.874 \pm .057$. This is almost as close a correlation as one would expect to find between the dimensions of corresponding bones on the right and left of the human body.

The considerations so far applied to the relation between marriage rates and first-birth rates naturally suggest a similar inquiry regarding higher order births. Without tabulating in detail the data relating to this question, it may briefly be stated that, in the material here studied, no significant correlation was found between the year-to-year changes in the marriage rates and the year-to-year changes in the second-birth rates with a two-year lag, but a fairly strong correlation was found when a lag of three years was allowed for.

Although the presence of a direct relationship between the marriage rate and the birth rate of first children to mothers is what one would expect, the high degree of correlation found in the present example is a matter of interest. It indicates quite clearly that any social or economic circumstance which will stimulate the marriage rate will, within a short time, effect an increase in first births. Conversely, any circumstance that will depress the marriage rate will, in turn, bring about a decrease in the annual rate of first births.

Our World's Fairs Exhibits

THE Metropolitan Life Insurance Company cordially invites readers of the STATISTICAL BULLETIN to attend its exhibits in the Business Systems and Insurance Building, New York World's Fair, and in the Hall of Science, Golden Gate International Exposition, San Francisco, Calif.

Health Record for April 1939

IN ALL of the four elapsed months of 1939, higher death rates were recorded among Metropolitan Industrial policyholders than in the like months of last year, and the 1939 cumulative death rate up to the end of April was 3.2 percent higher than at this time in 1938. The

health record for the current year, to date, is nevertheless a distinctly favorable one. For it must be borne in mind that our comparison is made with the figure for the very best health year of all time among this representative cross-section of the population of the United States and Canada. The month of April itself, with a mortality rate of only 8.4 per 1,000, registered the next to the lowest figure for the fourth month of any year. This figure may be compared with the average of 9.1 per 1,000 for April over a period of 10 years.

The more important developments of the 1939 mortality record to date, as they relate to the individual causes of death among the insured, are as follows:

The death rates for scarlet fever and diphtheria, which dropped last year to new low points, have shown still further improvement in 1939; the cumulative death rate for pneumonia, despite a marked rise in the mortality from influenza, is running 3 percent lower than at this time in 1938, the year of its minimum rate, to date; tuberculosis and diarrheal diseases, two other conditions which caused fewer deaths last year than ever before, are making even better records this year; the marked downward trend in the mortality from diseases of the maternal state, already in evidence for many years, is continuing; deaths from accidents (all forms combined), and from automobile accidents, have declined appreciably since last year.

Perhaps the most important development of the year, to date, however, is the continued drop in the mortality from tuberculosis. The decline is small, it is true, but even a slight drop is significant in view of the fact that it marks a further decrease from the previous minimum, recorded in 1938, when, for the first time in the history of these millions of insured wage-earners and their families, the tuberculosis death rate dropped below 50 per 100,000. So far, at least, the fears expressed by many that the aftereffects of the depression years would have an unfavorable influence on the tuberculosis death rate have in no wise been substantiated.

More than counterbalancing these favorable items, however, are appreciable increases in the death rates, as compared with those for the like part of last year, for influenza, cancer, diabetes, diseases of the heart and coronary arteries, and cerebral hemorrhage.

Reports of mortality and morbidity in the general population of the United States, both for the year to date and for the month of April, show that the state of the public health throughout the country is good. While the total number of deaths reported in April by 88 major cities was slightly higher than for April 1938, it was nevertheless below the average for this month during the last three years. There was less sickness from diphtheria, measles, scarlet fever, smallpox, typhoid fever, and whooping cough than was reported in either March of the current year or in April 1938.

Poliomyelitis was the only important reportable disease which increased in prevalence over both March 1939 and April 1938. One hundred and five cases of this disease were reported by 47 States and the District of Columbia in April, as against 51 cases in March. One fourth of the sickness occurred in the State of South Carolina, but in no other State were there any signs of an incipient epidemic of this disease.

Among the items of special health interest recently reported are the following: After having examined more than 160,000 people in a campaign against tuberculosis, the New York City Department of Health, with the assistance of the Works Progress Administration, will conduct tests among 15,000 fur workers in the city to determine the degree of prevalence of tuberculosis in that occupation. The Department of Health has established a staff of 24 physicians and 30 nurses at the World's Fair. There are seven first-aid stations, each providing a waiting room, surgery, nurses' and physicians' rooms, and wards for men and women. Regulations pertaining to the examination of food handlers and food establishments, and to the disposal of garbage will be strictly enforced. Every effort has been made to eliminate all breeding places of mosquitoes and other insects on the Fair site. The Surgeon General of the Army, who is also President of the International Congress of Military Medicine and Pharmacy, declared recently that the health of the United States Army is better today than at any other time in its history and, furthermore, that it is probably superior to that of any other military organization in the world.

The following table shows the mortality among Industrial policyholders for April 1939, March 1939, and April 1938, together with the death rates for the first four months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Death Rate per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis).*

MONTHS OF APRIL 1939, MARCH 1939, AND APRIL 1938

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	April 1939	March 1939	April 1938	Cumulative January-April	
				1939	1938
TOTAL—ALL CAUSES	842.3	900.3	813.5	868.5	841.8
Typhoid fever	.5	.3	.7	.4	.8
Measles	1.1	1.2	4.1	1.0	3.2
Scarlet fever	.9	1.1	2.6	1.2	2.1
Whooping cough	1.5	2.6	3.3	2.1	2.1
Diphtheria	.8	.9	1.3	1.4	2.0
Influenza	20.2	28.4	8.0	19.0	12.1
Pneumonia (all forms)	59.5	82.0	68.9	73.9	76.2
Tuberculosis (all forms)	47.9	50.9	51.4	47.5	48.6
Tuberculosis of respiratory system	42.5	45.8	45.8	42.6	44.0
Syphilis, locomotor ataxia, and general paralysis of the insane	12.1	11.9	11.9	11.7	11.9
Cancer (all forms)	99.6	99.6	92.8	101.4	94.4
Diabetes mellitus	26.7	29.9	25.0	29.3	26.4
Cerebral hemorrhage; apoplexy	65.8	64.4	60.1	66.0	63.1
Diseases of the heart†	169.3	180.2	159.4	179.8	167.0
Diseases of the coronary arteries	42.8	43.1	34.8	43.5	35.0
Angina pectoris	5.9	7.4	6.4	7.4	7.6
Diarrhea and enteritis	4.0	4.3	5.5	4.7	5.6
Appendicitis	10.5	10.6	9.9	9.7	10.2
Chronic nephritis (Bright's disease)	53.0	59.9	52.7	57.1	56.9
Puerperal state—total	6.6	4.9	6.4	5.6	6.3
Suicides	8.9	7.1	8.6	8.4	8.6
Homicides	4.6	3.5	4.2	4.4	4.6
Accidents—total	41.2	40.2	42.8	43.5	45.7
Automobile accidents	14.6	13.1	13.9	16.1	16.9
All other diseases and conditions	158.8	166.1	152.8	149.3	151.5

*The rates for 1938 and 1939 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis, coronary artery diseases, and angina pectoris.

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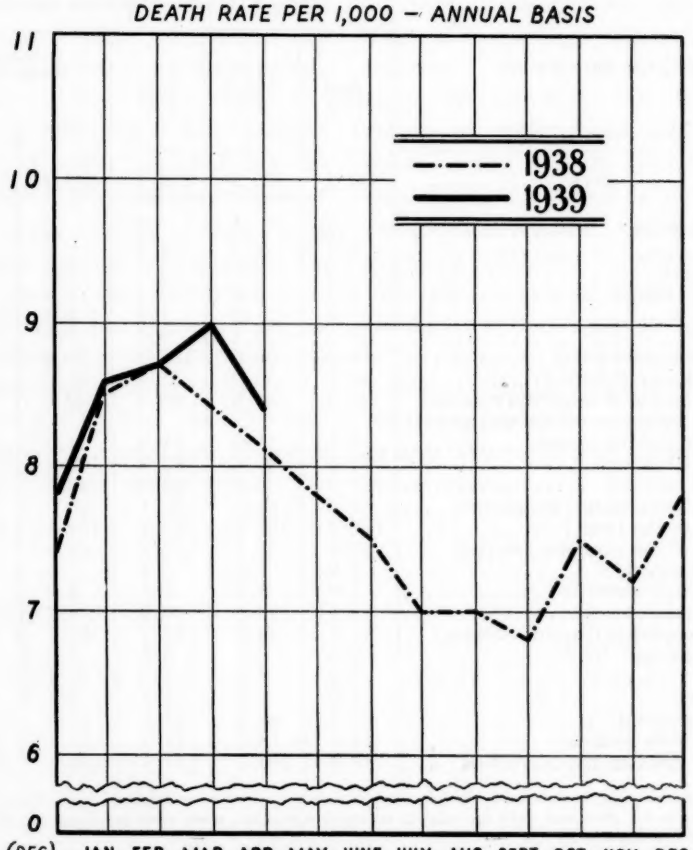
DEATH RATES FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
WEEKLY PREMIUM-PAYING BUSINESS – TOTAL PERSONS



(DEC)	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1938	8.5	8.7	8.4	8.1	7.8	7.5	7.0	7.0	6.8	7.5	7.2	7.8
1939	8.6	8.7	9.0	8.4								

Rates are provisional

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